

UNCLASSIFIED

UNIVERSAL DOCUMENTATION SYSTEM

INTERNATIONAL SPACE STATION ORBITAL VOL-II

PRD/PSP/OR/OD

UNCLASSIFIED

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 1031 - INDEX

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

SECTION	TITLE
1000	ADMINISTRATIVE
1031	INDEX
1050	ABBREVIATIONS/ACRONYMS
1051	TEST CODE DEFINITION
1052	SPECIAL CODE DEFINITION
1070	TECHNICAL REFERENCES
1100	PROGRAM DESCRIPTION
2000	TEST REQUIREMENTS/SUPPORT PLANS
2200	TELEMETRY DATA
2700	COMMUNICATION
2730	VOICE NETWORK TRANSMISSION
2734	VIDEO/DATA NETWORK TRANSMISSION
2750	VOICE TERMINATIONS
2780	OTHER COMMUNICATIONS
2800	VIDEO
3073	REAL TIME DATA DISTRIBUTION

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

=====

[PRD] DATABASE RECORD:	554951	REQUIREMENT STATUS:	APPROVED
DOCUMENT ID:	ISS II	APPROVAL DATE:	03/04/03
		INITIAL DATE:	04/26/00
ITEM NUMBER:	H1G	DATE LAST CHANGED:	06/17/04
SECTION:	2000	TIME LAST CHANGED:	08:26:00
REQUESTER:	MSFC		
TEST CODE:	ISSPAL	POICALL	

1. DESCRIPTION: TRACKING AND DATA RELAY SATELLITE SYSTEM

The Tracking and Data Relay Satellite System (TDRSS) shall support International Space Station (ISS) Payload Utilization with S-Band and Ku-Band communications services.

The ISS to Ground through TDRSS Interface Control Document (ICD), SSP 42018, identifies detailed technical interface and link performance requirements and specifications.

Coverage during ZOE transit via the Guam Remote Ground Terminal (GRGT) is required for all ISS S-Band services. ISS Ku-Band services are not required from GRGT during ZOE.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/04/03

=====

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

```
=====
[PRD] DATABASE RECORD:      545767      REQUIREMENT STATUS: APPROVED
DOCUMENT ID:                ISS II      APPROVAL DATE:      02/20/03
                                     INITIAL DATE:      04/26/00
ITEM NUMBER:                H1G        DATE LAST CHANGED:  03/16/09
SECTION:                    2200      TIME LAST CHANGED:  09:07:40

REQUESTER:                  MSFC
TEST CODE:                  ISSPAL      POICALL
```

1. DESCRIPTION: KU-BAND RETURN SERVICE FROM WSC TO THE HOSC

The Ku-Band Single Access Return (KSAR) link operates at a data rate of 150 Mbps. The requirements for Ku-band return data to the HOSC are as follows:

- a. NISN shall provide a fiber terrestrial communication network for the distribution of ISS Ku-Band downlink data. This network shall support variable data rates from 25 Mbps to 150 Mbps.
- b. The input to the network shall be IP packets, and the output to the MSFC is required to be in the same format as that provided to the network.
- c. NISN shall provide a 56 Kbps out-of-band frame relay cloud for network management and status reporting.
- d. The total service availability of the network shall not be less than 0.9995 percent.
- e. The maximum downtime shall not exceed 2 hours for any single outage.
- f. A NISN Mission Critical Service is required.
- g. The maximum acceptable packet loss is .001 percent.
- h. The one way data transport delay shall not exceed 120 ms.
- i. A Mission Critical Systems/MSN security level interface is required.
- j. Reference MSFC-PLAN-3340, IDEA Development Plan, for more detailed requirements.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/13/09

```
=====
[PRD] DATABASE RECORD:      551180      REQUIREMENT STATUS: APPROVED
DOCUMENT ID:                ISS II      APPROVAL DATE:      02/20/03
                                     INITIAL DATE:      04/26/00
ITEM NUMBER:                H2G        DATE LAST CHANGED:  06/17/04
SECTION:                    2200      TIME LAST CHANGED:  10:37:02

REQUESTER:                  MSFC
TEST CODE:                  ISSPAL      POICALL
```

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 551180
ITEM NUMBER: H2G

1. DESCRIPTION: ACS S-BAND RETURN DATA FROM WSC TO THE HOSC

The ACS SSAR data shall be transported from the WSC to the MSFC HOSC. During ZOE transit, the Guam Remote Ground Terminal (GRGT) shall provide ISS SSAR data to the HOSC via WSC. Requirements for S-Band return data to the HOSC are as follows:

- a. A 192/12 Kbps synchronous, serial bitstream data and clock service shall be provided for the transfer of real-time S-band downlink telemetry.
- b. A 192/12 Kbps synchronous, serial bitstream data and clock service shall be provided for the transfer of recorded S-band downlink telemetry.
- c. A NISN Mission Critical Service is required.
- d. A HOSC and WSC Mission Critical Systems/SER security level or higher interface is required.
- e. The data transport delay shall not exceed 600 ms from WSC to HOSC.
- f. The maximum bit error rate shall be $10E-6$.
- g. The communication service shall be transparent to the HOSC. (i.e. the data shall be presented by the communications equipment to the HOSC in the same format as that presented by the WSC to the communications equipment. Any overhead added by the communications service shall be removed from the data prior to delivery to the HOSC and shall require no additional processing or data handling capabilities on the part of the HOSC. The data provided by the WSC shall not be altered by the communications service).
- h. The communications service shall be capable of handling rate changes between 192 Kbps and 12 Kbps.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/26/03

[PRD] DATABASE RECORD: 554862 REQUIREMENT STATUS: DELETED
DOCUMENT ID: ISS II APPROVAL DATE: 03/04/03

ITEM NUMBER: H3G

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2700 - COMMUNICATION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

=====

[PRD] DATABASE RECORD:	545773	REQUIREMENT STATUS:	APPROVED
DOCUMENT ID:	ISS II	APPROVAL DATE:	04/26/00
		INITIAL DATE:	04/26/00
ITEM NUMBER:	H2G	DATE LAST CHANGED:	06/18/04
SECTION:	2700	TIME LAST CHANGED:	09:55:56

REQUESTER: MSFC
TEST CODE: ISSPAL POICALL

1. DESCRIPTION: SECURITY REQUIREMENTS

NISN provided communications services shall comply with NASA Procedures and Guidelines (NPG) 2810.1, NASA's Information Technology (IT) Security Program (latest revision). The users of NISN services shall comply with the Internet Protocol Operational Network (IONet) Access Protection Policy and Requirements document, GSFC document number 290-004.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/02/01

=====

[PRD] DATABASE RECORD:	545772	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	04/11/02

ITEM NUMBER: HT3G

=====

[PRD] DATABASE RECORD:	555021	REQUIREMENT STATUS:	APPROVED
DOCUMENT ID:	ISS II	APPROVAL DATE:	02/26/03
		INITIAL DATE:	04/26/00
ITEM NUMBER:	H6G	DATE LAST CHANGED:	03/13/03
SECTION:	2700	TIME LAST CHANGED:	07:31:26

REQUESTER: MSFC
TEST CODE: ISSPALL POICALL

1. DESCRIPTION: USER PERFORMANCE DATA MESSAGES

User Performance Data (UPD) messages for all ISS elements shall simultaneously share the same communications interface as the Shuttle messages of the same type. Refer to the 451-ICD-NCCDS/MOC, Annex 10 for detailed interface requirements.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/06/03

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2700 - COMMUNICATION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 555021
ITEM NUMBER: H6G

[PRD] DATABASE RECORD: 555153 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: ISS II APPROVAL DATE: 02/26/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H7G DATE LAST CHANGED: 03/13/03
SECTION: 2700 TIME LAST CHANGED: 07:32:15

REQUESTER: MSFC
TEST CODE: ISSPALL POICALL

1. DESCRIPTION: HOSC TO DSMC INTERFACE

Communications interfaces between the HOSC and the Data Service
Management Center (DSMC) shall be provided. Refer to the
530-ICD-NCCDS-MOC Annex 10 for detailed interface requirements.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/06/03

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

=====

[PRD] DATABASE RECORD:	545782	REQUIREMENT STATUS:	APPROVED
DOCUMENT ID:	ISS II	APPROVAL DATE:	09/03/03
		INITIAL DATE:	04/26/00
ITEM NUMBER:	HIGHT	DATE LAST CHANGED:	10/28/04
SECTION:	2730	TIME LAST CHANGED:	10:56:52
REQUESTER:	MSFC		
TEST CODE:	ISSPAL	POICALL	

1. DESCRIPTION: ISS VOICE COMMUNICATION REQUIREMENTS

NISN shall provide voice communication services from the MSFC HOSC to NASA Centers and TSC locations. The number of voice loops required are as follows:

Loops	Destination	
-----	-----	
144	JSC	(NCHD)
6	GSFC	(NCHD)
24	ARC TSC	(NCHD)
48	GRC TSC	(NCHD)

SUPPLIER: GSFC	AGENCY: GSFC/451	(GODDARD SPACE FLIGHT CENTER)
SUPPLIER COMMITMENT: WILCO		RESPONSE DATE: 07/21/04	
SUPPLIER: MSFC	AGENCY: MSFC/FD43	(MARSHALL SPACE FLIGHT CENTER)
SUPPLIER COMMITMENT: WILCO		RESPONSE DATE: 09/03/03	
SUPPLIER: JSC	AGENCY: JSC/DB	(T - JOHNSON SPACE CENTER)
SUPPLIER COMMITMENT: WILCO		RESPONSE DATE: 07/21/04	

=====

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

=====

[PRD] DATABASE RECORD:	551424	REQUIREMENT STATUS:	APPROVED
DOCUMENT ID:	ISS II	APPROVAL DATE:	03/13/03
		INITIAL DATE:	04/26/00
ITEM NUMBER:	HT1G	DATE LAST CHANGED:	08/10/09
SECTION:	2734	TIME LAST CHANGED:	10:44:11

REQUESTER: MSFC JSC
TEST CODE: ISSPAL POICALL

1. DESCRIPTION: HOSC TO SSCC DATA TRANSFER INTERFACE

NISN shall provide an Open IONET and a NASA operational WAN communication service between the HOSC and the SSCC. This WAN service, using the Transmission Control Protocol/Internet Protocol (TCP/IP) suite will transport the following data types: operational and simulated commands (payload and core), planning data files, uplink file transfer, and archived ISS systems data requests.

- a. A CIR of 112 kbps shall be provided for the transfer of operational and simulated commands via a dedicated point-to-point circuit or equivalent dedicated private network.
- b. A CIR of 300 Kbps shall be provided for the transfer of operational and simulated uplink files.
- c. A CIR of 192 Kbps shall be provided for the transfer of planning data files.
- d. A CIR of 1 Kbps shall be provided for the transfer of archive requests.
- e. A CIR of 256 Kbps shall be provided for the transfer of Orbiter Communication Adapter (OCA) data.
- f. A NISN Mission Critical Service (for a through d) is required.
- g. A NISN Premium Service for e. is required.
- h. A SSCC and HOSC Mission Critical Systems/MSN security level interface (for a through d) is required.
- i. The one-way data transport delay (for a through d) shall not exceed 120 ms.
- j. The one-way data transport delay for e. shall not exceed 100 ms.
- k. The maximum acceptable packet loss (for a through d) is .001 percent.
- l. The maximum acceptable packet loss for e. is 1 percent.
- m. Refer to the SSCC to HOSC ICD (SSP 45001) for detailed interface requirements.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 551424
ITEM NUMBER: HT1G

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/10/09

[PRD] DATABASE RECORD: 545779 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: HT2G DATE LAST CHANGED: 08/10/09
SECTION: 2734 TIME LAST CHANGED: 10:25:36

REQUESTER: MSFC JSC
TEST CODE: ISSPAL POICALL

1. DESCRIPTION: SSCC TO HOSC DATA TRANSFER INTERFACE

NISN shall provide an Open IONET and a NASA Operational Wide WAN communications service between the SSCC and the HOSC. This WAN service utilizing the TCP/IP suite will transport the following data types: command responses, command history data files, planning data files, uplink file transfers, and archived ISS Systems data files.

- a. A CIR of 112 kbps shall be provided for the transfer of operational and simulated command responses via a dedicated point-to-point circuit or equivalent dedicated private network.
- b. A CIR of 112 Kbps shall be provided for the transfer of operational and simulated command history files.
- c. A CIR of 192 Kbps shall be provided for the transfer of planning data files.
- d. A CIR of 150 Kbps shall be provided for the transfer of archived ISS Systems data files.
- e. A 192 Kbps, synchronous, serial bitstream data and clock service shall be provided for the transfer of simulated S-band downlink telemetry.
- f. A CIR of 4 Kbps shall be provided for the transfer of real-time and simulated IAM Antenna Management data.
- g. A CIR of 256 Kbps shall be provided for the transfer of Orbiter Communications Adapter (OCA) data.
- h. A NISN Mission Critical Service (for a through f) is required.
- i. A NISN Premium Service for g. is required.
- j. SSCC and HOSC Mission Critical System/MSN security level interface is required.

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 545779
ITEM NUMBER: HT2G

- k. The one-way data transport delay (a through f) shall not exceed 120 ms.
- l. The one-way data transport delay for g. shall not exceed 100 ms.
- m. The maximum acceptable packet loss (for a through f) is .001 percent.
- n. The maximum acceptable packet loss for g. is 1 percent.
- o. Refer to SSCC to HOSC ICD (SSP 45001) for detailed interface requirements.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/10/09

[PRD] DATABASE RECORD: 545780 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: HT3G DATE LAST CHANGED: 03/19/03
SECTION: 2734 TIME LAST CHANGED: 10:24:13

REQUESTER: MSFC JSC
TEST CODE: ISSPAL POICALL

1. DESCRIPTION: SSTF TO HOSC DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational Wide Area Network (WAN) communications service for communications between the SSTF and the HOSC.

The WAN service, utilizing TCP/IP protocol suite, will transport the following data types: simulated payload health and status data and Instructor Station (IS) training session data stream.

- a. A CIR of 256 Kbps shall be provided for the transfer of simulated Payload Health and Status data.
- b. A CIR of 1.1 Mbps shall be provided for the transfer of IS Training Session Data.
- c. A CIR of 100 Kbps shall be provided for the transfer of simulated S-band telemetry data.
- d. A NISN Mission Critical service is required.
- e. A SSTF and HOSC Mission Critical Systems/SER security level interface is required.

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 545780
ITEM NUMBER: HT3G

- f. The one-way data transport delay shall not exceed 100 ms.
- g. The maximum acceptable packet loss is .001 percent.
- h. Refer to the SSTF to MSFC POIC and RAPS ICD (SSP 50088) for detailed interface requirements.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/19/03

[PRD] DATABASE RECORD: 555027 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: HT4G DATE LAST CHANGED: 05/09/03
SECTION: 2734 TIME LAST CHANGED: 08:27:21

REQUESTER: MSFC JSC
TEST CODE: ISSPAL POICALL

1. DESCRIPTION: HOSC TO SSTF DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational WAN communications service for communications between the SSTF and the HOSC. This WAN service, utilizing TCP/IP protocol suite, will transport the following data types: Simulated Payload Health and Status and Instructor Station (IS) Training Session data.

- a. A CIR of 1.4 Mbps shall be provided for the transfer of Remote Area for Payload Support (RAPS) data and Instructor Operator Station (IOS) Instructor Station (IS) Training Session Data.
- b. A CIR of 100 Kbps shall be provided for the transfer of S-band command data.
- c. A NISN Mission Critical Service is required.
- d. A SSTF and HOSC Mission Critical Systems/SER security level interface is required
- e. The one-way data transport delay shall not exceed 100 ms.
- f. The maximum acceptable packet loss is .001 percent.
- g. Refer to SSTF to MSFC POIC and RAPS ICD (SSP 50088) for detailed interface requirements.

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 555027
ITEM NUMBER: HT4G

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/19/03

[PRD] DATABASE RECORD: 555017 REQUIREMENT STATUS: DELETED
DOCUMENT ID: ISS II APPROVAL DATE: 06/10/02

ITEM NUMBER: H5G

[PRD] DATABASE RECORD: 555730 REQUIREMENT STATUS: DELETED
DOCUMENT ID: ISS II APPROVAL DATE: 06/10/02

ITEM NUMBER: H6G

[PRD] DATABASE RECORD: 545790 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H7G DATE LAST CHANGED: 03/16/09
SECTION: 2734 TIME LAST CHANGED: 09:12:28

REQUESTER: MSFC
SUBREQUESTER: JSCT
TEST CODE: JSCTALL

1. DESCRIPTION: HOSC TO JSC TSC DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational WAN communications service for communications between the HOSC and the JSC TSC. This WAN service, utilizing TCP/IP protocol suite, will transport the following data types: Real-Time data, COR Dump of Real-Time data, PIMS Data, PPS Data, GSE Packet definition and distribution, OCMS Data, Telemetry Services, and Commanding Services.

The X-Windows interface requires a 56 Kbps data service for each active session (screen which is continually updating). The X-Windows interface require a 56 Kbps data service for the combined non-active sessions.

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 545790
ITEM NUMBER: H7G

- a. A total of 7.544 Mbps bandwidth shall be provided for the transfer of real-time payload experiment data, stored payload experiment data, payload health and status data, flight ancillary data, downlink file transfers, GSE subsets, and custom data packets.
- b. A NISN Premium service is required, with a maximum downtime of no more than 4 hours.
- c. A HOSC and JSC Mission Critical Systems/SER security level interface is required.
- d. The one-way data transport delay shall not exceed 100 ms.
- e. The maximum acceptable packet loss is <1%.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/13/09

[PRD] DATABASE RECORD: 555061 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H8G DATE LAST CHANGED: 03/16/09
SECTION: 2734 TIME LAST CHANGED: 09:15:57

REQUESTER: MSFC
TEST CODE: JSCTALL

1. DESCRIPTION: JSC TSC TO HOSC DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational WAN communications service for communications between the HOSC and the JSC TSC. This WAN service, utilizing TCP/IP protocol suite, will transport the following data types: Real-Time data, COR Dump of Real-Time data, PIMS Data, PPS Data, GSE Packet definition and distribution, OCMS Data, Telemetry Services, and Commanding Services.

The X-Windows interface requires a 56 Kbps data service for each active session (screen which is continually updating). The X-Windows interface requires a 56 Kbps data service for the combined non-active sessions.

- a. A total of 1.544 Mbps bandwidth shall be provided for the transfer of

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 555061
ITEM NUMBER: H8G

- X-Window commands, PIMS data, PPS data, and uplink file transfers.
- b. A NISN Premium service is required, with a maximum downtime of no more than 4 hours.
 - c. A HOSC and JSC TSC Mission Critical Systems/SER security level interface is required.
 - d. The one-way data transport delay shall not exceed 100 ms.
 - e. The maximum acceptable packet loss is <1%.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/13/09

[PRD] DATABASE RECORD: 554957 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H9G DATE LAST CHANGED: 03/16/09
SECTION: 2734 TIME LAST CHANGED: 09:19:22

REQUESTER: MSFC
TEST CODE: GRCTALL

1. DESCRIPTION: HOSC TO GRC TSC DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational Wide Area Network (WAN) communications service for communications between the HOSC and the GRC TSC. This WAN service, utilizing TCP/IP protocol suite, will transport the following data types: Real-Time data, COR Dump of Real-Time data, PIMS Data, PPS Data, GSE Packet definition and distribution, OCMS Data, Telemetry Services, and Commanding Services.

- a. A total of 7.278 Mbps bandwidth shall be provided for the transfer of real-time payload experiment data, stored payload experiment data, payload health and status data, flight ancillary data, group ancillary data, GSE subsets, and custom data packets.
- b. A NISN Premium service is required, with a maximum downtime of no more than 4 hours.
- c. A HOSC and GRC TSC Mission Critical Systems/SER security level interface is required.

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 554957
ITEM NUMBER: H9G

- d. The one-way data transport delay shall not exceed 100 ms.
- e. The maximum acceptable packet loss is <1%.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/13/09

[PRD] DATABASE RECORD: 555047 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H10G DATE LAST CHANGED: 03/11/09
SECTION: 2734 TIME LAST CHANGED: 09:34:00

REQUESTER: MSFC
TEST CODE: GRCTALL

1. DESCRIPTION: GRC TSC TO HOSC DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational Wide Area Network (WAN) communications service for communications between the HOSC and the GRC TSC. This WAN service, utilizing TCP/IP protocol suite, will transport the following data types: Real-Time data, COR Dump of Real-Time data, PIMS Data, PPS Data, GSE Packet definition and distribution, OCMS Data, Telemetry Services, and Commanding Services.

- a. A CIR of 1.544 Mbps shall be provided for the transfer of X-Window commands, PIMS data, PPS data, and uplink file transfer.
- b. A NISN Premium service is required.
- c. A HOSC and GRC TSC Mission Critical Systems/SER security level interface is required.
- d. The one-way data transport delay shall not exceed 100 ms.
- e. The maximum acceptable packet loss is <1 percent.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 03/11/09

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

```
=====
[PRD] DATABASE RECORD:      554960      REQUIREMENT STATUS: APPROVED
DOCUMENT ID:                ISS II      APPROVAL DATE:      02/18/03
                                     INITIAL DATE:      04/26/00
ITEM NUMBER:                H11G      DATE LAST CHANGED:  03/13/03
SECTION:                    2734      TIME LAST CHANGED:  07:41:49

REQUESTER:                  MSFC
TEST CODE:                  RSAALL
```

1. DESCRIPTION: HOSC AND MCC-M MISSION DATA TRANSFER INTERFACE

NISN will provide a full duplex NASA operational PIP Wide Area Network (WAN) communications service for communications from the HOSC to the Russian Space Agency (RSA). This PIP WAN service using the Transmission Control Protocol/Internet Protocol (TCP/IP) suite of protocols will provide the exchange of Mission Planning Data Files and will also be used for the Payload Information Management System (PIMS) interface.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/26/03
RESPONSE:

```
-----
[PRD] DATABASE RECORD:      556388      REQUIREMENT STATUS: DELETED
DOCUMENT ID:                ISS II      APPROVAL DATE:      02/18/03
```

ITEM NUMBER: H12G

```
-----
[PRD] DATABASE RECORD:      554947      REQUIREMENT STATUS: APPROVED
DOCUMENT ID:                ISS II      APPROVAL DATE:      03/13/03
                                     INITIAL DATE:      04/26/00
ITEM NUMBER:                H13G      DATE LAST CHANGED:  05/09/03
SECTION:                    2734      TIME LAST CHANGED:  08:30:06
```

REQUESTER: MSFC
TEST CODE: RPIALL

1. DESCRIPTION: HOSC TO RPI DATA TRANSFER INTERFACE

DATA: NISN shall provide a 10 MBPS Standard IP routed data interface between the HOSC and each designated RPI Peering Point for the purpose of transporting telemetry data and providing an Internet interface to POIC Web services, PPS, VoIP, and programmatic interfaces.

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 554947
ITEM NUMBER: H13G

- a. Mean Time to Restore (MTTR) between the NISN-provided HOSC Demarcation and a Peering Point shall not exceed 24 hours.
- b. The one-way transport delay between the NISN-provided HOSC Demarcation and a Peering Point shall not exceed 250 ms.
- c. The maximum acceptable packet loss between the NISN-provided HOSC Demarcation and a Peering Point is 1%.
- d. The coverage period for a Standard IP routed data service as identified in the NISN Services Document is acceptable.
- e. NISN responsibility for performance is terminated at the Peering Point(s).
- f. NISN will provide assistance in isolating outages between the Peering Point and the RPI Site, if requested.

NOTE: It is the responsibility of each RPI to make the arrangements for the transfer of data from the Peering Point to their RPI location. Performance standards, restoration times, and other Service Level Agreement (SLA) type items shall be made solely between the RPI and their Internet Service Provider (ISP). There shall be no NISN involvement in this process.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/19/03
RESPONSE:

[PRD] DATABASE RECORD: 554932 REQUIREMENT STATUS: DELETED
DOCUMENT ID: ISS II APPROVAL DATE: 04/24/03

ITEM NUMBER: H15G

[PRD] DATABASE RECORD: 581857 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: ISS II APPROVAL DATE: 04/18/05
INITIAL DATE: 04/18/05
ITEM NUMBER: H15G DATE LAST CHANGED: 04/26/05
SECTION: 2734 TIME LAST CHANGED: 14:44:36

REQUESTER: MSFC
TEST CODE: RPIALL

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 581857
ITEM NUMBER: H15G

1. DESCRIPTION: JSC ISIL TO MSFC HOSC DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational WAN communications service for data transfer from the JSC ISS Systems Integration Lab (ISIL) to the MSFC HOSC. This WAN service will provide for the transport of VCDU packet formatted data from the HFRM system and for Ethernet UDP Packet formatted data from the Payload MDM System.

- A. A CIR of 50 Mbps shall be provided
- B. A Mission Critical Systems/SER security level interface is required.
- C. This WAN service shall have an availability of not less than 99.5%.
- D. The restoral time shall not exceed 24 hours.
- E. The maximum packet loss shall not exceed 1%.
- F. The one way data transport delay shall not exceed 250 ms.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
RESPONDER: TONY WILLIAMS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/26/05

[PRD] DATABASE RECORD: 554926 REQUIREMENT STATUS: DELETED
DOCUMENT ID: ISS II APPROVAL DATE: 06/10/02

ITEM NUMBER: H16G

[PRD] DATABASE RECORD: 554929 REQUIREMENT STATUS: DELETED
DOCUMENT ID: ISS II APPROVAL DATE: 03/03/03

ITEM NUMBER: H17G

[PRD] DATABASE RECORD: 554930 REQUIREMENT STATUS: DELETED
DOCUMENT ID: ISS II APPROVAL DATE: 03/03/03

ITEM NUMBER: H18G

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

=====

[PRD] DATABASE RECORD:	554938	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	03/03/03

ITEM NUMBER: H19G

[PRD] DATABASE RECORD:	554966	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	02/18/03

ITEM NUMBER: H20G

[PRD] DATABASE RECORD:	554965	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	03/03/03

ITEM NUMBER: H21G

[PRD] DATABASE RECORD:	554963	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	04/26/00

ITEM NUMBER: H22G

[PRD] DATABASE RECORD:	554964	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	04/26/00

ITEM NUMBER: H23G

[PRD] DATABASE RECORD:	554962	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	03/03/03

ITEM NUMBER: H24G

[PRD] DATABASE RECORD:	556393	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	06/10/02

ITEM NUMBER: H25G

[PRD] DATABASE RECORD:	556391	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	06/10/02

ITEM NUMBER: H26G

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

=====

[PRD] DATABASE RECORD:	556392	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	03/03/03

ITEM NUMBER: H27G

[PRD] DATABASE RECORD:	560950	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	04/24/03

ITEM NUMBER: H29G

[PRD] DATABASE RECORD:	561440	REQUIREMENT STATUS:	DELETED
DOCUMENT ID:	ISS II	APPROVAL DATE:	11/20/01

ITEM NUMBER: H30G

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

=====

[PRD] DATABASE RECORD:	554952	REQUIREMENT STATUS:	APPROVED
DOCUMENT ID:	ISS II	APPROVAL DATE:	03/01/10
		INITIAL DATE:	04/26/00
ITEM NUMBER:	HT1GHT	DATE LAST CHANGED:	03/09/10
SECTION:	2750	TIME LAST CHANGED:	12:48:01

REQUESTER:	MSFC	JSC	
TEST CODE:	FULL-TIME	ISSPAL	POICALL

1. DESCRIPTION: VOICE COMMUNICATION DETAILS TO JSC & GSFC

I. JSC-to-MSFC		
REAL-TIME SUPPORT		COMMENTS & RESTRICTIONS
1 S/G 1	T/M	RPI Talk access controlled by PAYCOM
1 S/G 2	T/M	RPI Talk access controlled by PAYCOM
ASMBLY COORD 1	T/M	
AMS MGR	T/M	IVoDS for AMS Users Only
AMS POCC	T/M	IVoDS for AMS Users Only
AMS SOC	T/M	IVoDS for AMS Users Only
CATO 1	T/M	
CBOSS CONF	T/M	JSC TSC CBOSS IVoDS Users
CIO 1	T/M	
DOD PAYLOAD	T/M	IVoDS for DOD Users only
ECLS COORD	T/M	ECLS
EPO COORD 1	T/M	
ETOV COORD	T/M	
FCR SYS 1	T/M	
FD/POD COORD 1	T/M	JSC ISS FD & MSFC POD ONLY
FMT COORD 1	T/M	
HLS CONF 1	T/M	IVoDS for JSC TSC Users Only
HLS PLAN 1	T/M	IVoDS for JSC TSC Users Only
HOSC O/W	T/M	IST Use Only
HOUSTON SUPT	T/M	
IEPC	T/M	
IMC COORD 1	T/M	NODE 2
IP CONF 1	T/M	
IP/GC 1	T/M	
IP STOWAGE 1	T/M	
ISS AFD 1	T/M	Talk for POD & OC Only
ISS CAPCOM 1	T/M	MSFC PAYCOM, POD, & OC ONLY
ISS COMMAND 1	T/M	
ISS FD 1	T/M	Talk for POD Only
ISS MCC COORD 1	T/M	IST Use Only
ISS MED OPS 1	T/M	

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 554952
ITEM NUMBER: HT1GHT

ISS MER 1	T/M	
ISS MER MGR 1	T/M	ECLS
ISS MER PROB 1	T/M	
ISS OPS	T/M	
ISS PRIME OPS 1	T/M	
ISS SYS COORD 1	T/M	NODE 2
ISS SYS COORD 4	T/M	
OCA FCR 1	T/M	
OCA ISS 1	T/M	
ODIN 1	T/M	
OPS PLAN 1	T/M	
OSO 1	T/M	ECLS
OSO COORD 1	T/M	
OSO MPSR 1	M	ECLS
PHALCON 1	M	NODE 2
PHALCON COORD 1	T/M	
PLAN/STOW COORD	T/M	
RS ISS VHF 1	M	FD may authorize T/M for VHF supports
RS ISS VHF 2	M	
S/T PLAN COORD 1	T/M	
TCOM 1	T/M	MSFC PAYCOM, POD, & OC ONLY
TCS COORD 1	T/M	
THOR 1	M	NODE 2
THOR CALL 1	T/M	
TRANSL RUS TO ENG	M	
UCSD-MCG	T/M	
XCOM 1	T/M	Talk for POIC PAYCOM Only
II. JSC-to-MSFC		
SIMULATION & TEST SUPPORT		COMMENTS & RESTRICTIONS
2 S/G 1	T/M	RPI Talk access controlled by PAYCOM
2 S/G 2	T/M	RPI Talk access controlled by PAYCOM
AFD CONF (SIM)	T/M	Configured only for Joint STS/ISS Sim debriefs between JSC and MSFC
ASMBLY COORD 2	T/M	
CATO 2	T/M	
EPO COORD 2	T/M	
FCR SYS 2	T/M	
FD/POD COORD 2	T/M	Restricted to MSFC POD console

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 554952
ITEM NUMBER: HT1GHT

FMT COORD 2	T/M	
IP CONF 2	T/M	
IP/GC 2	T/M	
IP STOWAGE 2	T/M	
ISS AFD 2	T/M	Talk for POD, OC & Sim Sup Only
ISS CAPCOM 2	T/M	MSFC PAYCOM, POD, & OC ONLY
ISS COMMAND 2	T/M	
ISS FD 2	T/M	
ISS MCC COORD 2	T/M	IST Use Only
ISS MED OPS 2	T/M	
ISS MER 2	T/M	
ISS MER MGR 2	T/M	ECLS
ISS MER PROB 2	T/M	ECLS
ISS PRIME OPS 2	T/M	
ISS SIM DATA	T/M	POIC Sim Team Only
ISS TN COORD 2	M	
ISS TRNING COORD	T/M	POIC Sim Team Only
OCA ISS 2	T/M	
OCA RFCR	T/M	
ODIN 2	T/M	
OPS PLAN 2	T/M	
ORT COORD	T/M	
OSO COORD 2	T/M	
PHALCON COORD 2	T/M	
SIM ISS SYS COORD 1	T/M	NODE 2
SIM ISS SYS COORD 4	T/M	
SIM ISS OPS	T/M	
SIM P/L 1	T/M	POIC Sim Team Only
SIM P/L 2	T/M	POIC Sim Team Only
SIM RS ISS VHF 1	M	
SIM RS ISS VHF 2	M	
STL 2	T/M	POIC Sim Team Only
S/T PLAN COORD 2	T/M	
SVF COORD 1	T/M	IST Use Only
SVT COORD 1	T/M	SVT TESTING WITH COL-CC
TCOM 2	T/M	MSFC PAYCOM, POD, & OC ONLY
TCS COORD 2	T/M	
THOR CALL 2	T/M	
TSC SIM FD	T/M	Connects to ISS FD 2 for JSC TSC Sims

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 554952
ITEM NUMBER: HT1GHT

TSC SIM S/G-1	T/M	Connects to 2 S/G 2 for JSC TSC Sims
TSC SIM S/G-2	T/M	Connects to 2 S/G 1 for JSC TSC Sims
XCOM 2	T/M	

III. MSFC-to-JSC

REAL-TIME SUPPORT

COMMENTS & RESTRICTIONS

1 SCI 1	T/M	JSC TSC or CSA Only
1 SCI 2	T/M	JSC TSC or CSA Only
1 SCI 3	T/M	JSC TSC or CSA Only
1 SCI 4	T/M	JSC TSC or CSA Only (Note 3)
1 SCI 5	T/M	JSC TSC or CSA Only
DMC 1	T/M	JSC TSC Only
Ku COORD 1	T/M	JSC SSCC (T/M) & JSC TSC (M)
LIS COORD 1	T/M	SSCC and JSC TSC
OC 1	T/M	JSC TSC Only
PLAN COORD 1	T/M	SSCC Only
POD 1	T/M	SSCC and JSC TSC
POIC STOWAGE 1	T/M	JSC TSC Only
PRO 1	T/M	JSC TSC Only
RGEN COORD	T/M	ECLS
RPI OPS 1	T/M	JSC TSC or CSA Only
SOC 1	T/M	JSC TSC Only
WRS COORD	T/M	JSC MER ONLY

IV. MSFC-to-JSC

SIMULATION & TEST SUPPORT

COMMENTS & RESTRICTIONS

2 SCI 1	T/M	JSC TSC or CSA Only
2 SCI 2	T/M	JSC TSC or CSA Only
2 SCI 3	T/M	JSC TSC or CSA Only
2 SCI 4	T/M	JSC TSC or CSA Only (Note 3)
2 SCI 5	T/M	JSC TSC or CSA Only
DMC 2	T/M	JSC TSC Only
JSC SIM	T/M	JSC TSC & POIC Sim Teams Only
Ku COORD 2	T/M	JSC SSCC (T/M) & JSC TSC (M)
LIS COORD 2	T/M	SSCC and JSC TSC
OC 2	T/M	JSC TSC Only
PAYCOM 2	T/M	LIS REP at JSC TSC Only
PLAN COORD 2	T/M	SSCC Only

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 554952
ITEM NUMBER: HT1GHT

POD 2	T/M	SSCC and JSC TSC
PRO 2	T/M	JSC TSC Only
RPI OPS 2	T/M	JSC TSC or CSA Only
SOC 2	T/M	JSC TSC Only
TSC SIM	T/M	POIC & JSC TSC Sim Teams Only

V. JSC-to-MSFC (STS Support to ISS Payloads)

A/G 1	M	FD may approve T/M during Joint Ops
A/G 2	M	FD may approve T/M during Joint Ops
AFD CONF	T/M	Talk for POD, SOC, & OC Only
FD	T/M	Talk for POD & OC Only
MCC COORD	T/M	IST Use Only
POCC CMD	T/M	
PRIME OPS	T/M	

VI. JSC-to-MSFC (PAO LOOPS)

COMMENTATOR OPS	T/M	PAO Use Only
ISS SUPPORT AUDIO	T/M	PAO Use Only
MISSION AUDIO	M	PAO Use Only Routed via GP-D8563
SUPPORT AUDIO	M	PAO Use Only
PAO COORD	T/M	PAO Use Only
PAO CUE	T/M	PAO Use Only
VIDEO OPS	T/M	PAO Use Only

VII. GSFC-to-MSFC

REAL-TIME SUPPORT		COMMENTS & RESTRICTIONS
GM COORD	T/M	IST Only
NISN COMM COORD	T/M	IST Only
ISS SITE COORD	T/M	IST Only during CONUS VHF supports.
ISS TN COORD 1	T/M	
TV CONFERENCE	T/M	
WSC PLAYBACK COORD	T/M	IST Only

DBR NOTES:

1. JSC is responsible to provide responses to Section I - VI only.
2. GSFC is responsible to provide responses to Section VII only.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 554952
ITEM NUMBER: HT1GHT

RESPONDER: TURONALD BAMKS

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 03/01/10

SUPPLIER: MSFC AGENCY: MSFC/EO60 (MARSHALL SPACE FLIGHT CENTER)
RESPONDER: MIKE BLUM

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 03/01/10

SUPPLIER: JSC AGENCY: JSC/DB (T - JOHNSON SPACE CENTER)
RESPONDER: KEN JONES

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 03/01/10

[PRD] DATABASE RECORD: 557683 REQUIREMENT STATUS: DELETED
DOCUMENT ID: ISS II APPROVAL DATE: 06/07/01

ITEM NUMBER: HT2GHT

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2800 - VIDEO

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

```
=====
[PRD] DATABASE RECORD:      545778      REQUIREMENT STATUS: APPROVED
DOCUMENT ID:                ISS II      APPROVAL DATE:      07/19/07
                                     INITIAL DATE:      04/26/00
ITEM NUMBER:                H1GT      DATE LAST CHANGED:  07/23/07
SECTION:                    2800      TIME LAST CHANGED:  13:09:09

REQUESTER:                  MSFC
TEST CODE:                  ISSPALL      POICALL
```

1. DESCRIPTION: TELEVISION DISTRIBUTION REQUIREMENTS

NISN is to provide two (2) video channels to the HOSC, GRC TSC, ARC TSC, and to the RPI Peering Point. NISN is to encode NTSC video sourced from JSC Bldg 8, up to 6 Mbps per channel.

JSC ISD is responsible for delivery of NTSC video from JSC Bldg 8 to the JSC NISN PIP demarcation point. Service restoration for ISD resources is <8 hours on weekdays, and on-call on weekends.

A NISN PIP service is required to the HOSC/MSFC TSC, the GRC TSC, and the ARC TSC. NISN will provide decoding equipment at the MSFC Bldg. 4207 and at the GRC TSC and ARC TSC to deliver NTSC video outputs.

A NISN SIP service is required to the RPI Peering Point.

The RPI sites require the video to be delivered in IP format for viewing on a PC. RPI's are responsible for the transfer of encoded video from the Peering Point to their RPI locations and are responsible for the decoding and display of the received video data delivered in IP format.

The following table identifies current and future video service requirements, and will be updated as locations are changed.

Description	Number of Channels
-----	-----
MSFC HOSC	2
MSFC TSC	2
GRC TSC	2
ARC TSC	2
Portland State University	1
Univ. of Colorado/Boulder	1
Univ. of Cal./San Diego	1

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2800 - VIDEO

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 04/29/10

CONTINUED

[PRD] DATABASE RECORD: 545778
ITEM NUMBER: H1GT

Mass Inst of Technology 1

REF: ISS VOL-I SECTION 2800 ITEM TG2GHT DBR 553803

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
RESPONDER: TONY WILLIAMS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/23/07

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)
RESPONDER: KEN JONES

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/19/07

THIS REPORT CONTAINS 28 PAGES

REPORT BY: FORM=06 DOC=ISS II SPL= G P1030=N